

APPENDIX F

Description of ecoregions that intersection with the 14 ESUs.

Table A-1. Description of ecoregions that intersect with the 14 ESUs.

Ecoregion Province	Ecoregion Location/Size	Vegetation	Wildlife
Pacific Lowland Mixed Forest	Puget-Willamette Lowland, 14,900 mi ² (38,600 km ²)	Historical vegetation was predominately dense coniferous forest of western redcedar, western hemlock, and Douglas-fir. Interior valleys forests were less dense and included deciduous trees, such as big-leaf maple, Oregon ash, and black cottonwood. Some prairies with Oregon white oak, Pacific madrone, Douglas-fir. Swamps/bogs are abundant on poorly drained sites.	Fauna is similar to Cascade Mixed Forest Province. Mountain lion, bobcat are mule deer are common. Western gray squirrel in oak trees. Bushytail wood rat in riparian areas and forest edges. Brush rabbit, gray fox, ruffed grouse in scattered thickets. Dusky Canada goose winters exclusively in the Willamette Valley in Oregon. Periodically abundant acorn crop attracts flocks of band-tailed pigeons, acorn woodpeckers, and mountain quail. Numerous reptiles, including northern Pacific rattlesnake, the only poisonous snake in the Pacific Northwest.
Cascade Mixed Forest – Coniferous Forest – Alpine Meadow	Pacific Northwest, 53,400 mi ² (138,300 km ²)	Dense conifer forests of Douglas-fir, western redcedar, western hemlock, grand fir, silver fir, Sitka spruce, Alaska-cedar and various shrubs at low elevations. Riparian forests contain deciduous black cottonwood and red alder. Redwood in northwestern California. Ponderosa pine forests along the dry eastern slopes of the Cascades are more open and contain grass and shrubs. Higher Cascade elevations have subalpine forests of mountain hemlock, subalpine fir, whitebark pine, and Alaska-cedar. Alpine zone above timberline contains numerous shrub and herb species.	Similar to Pacific Lowland Mixed Forest Province. Large mammals include elk, deer, mountain lion, bobcat, and black bear. Small mammals include mice, Douglas squirrels, martens, Townsend chipmunks, red tree voles, and bushytail wood rats. Common birds are the winter wren, Townsend's warbler, chestnut-backed chickadee, red-breasted nuthatch, gray jay, Steller's jay, blue and ruffed grouse, hawks and owls in the northwest. Spotted owl and marbled murrelet in old-growth forests. Numerous amphibians and reptiles including Pacific treefrog, Pacific giant salamander, northern alligator lizard and rubber boa.
California Coastal Chaparral Forest Shrub	Southern California coast, 10,300 mi ² (26,700 km ²)	Endemic tree species include Monterey cypress, Torrey pine, Monterey pine, and Bishop pine. Sagebrush/grassland communities in coastal plains and valleys. Numerous broadleaf tree species in riparian forests. Small, drought-tolerant trees including live oak, white oak on hills and lower mountains. Chaparral (scrub vegetation), including chamise, manzanitas on drier steep hills. Coastal scrub includes coyote bush, California sagebrush, bush lupine. Significant conversion of coastal plains/interior valleys for urban and agricultural (grapes, nuts, citrus, vegetable) uses. Australian bluegum eucalyptus is widespread.	Brushy rabbit and opossum are common. Marine mammals in coastal areas include several species of seals and sea lions, sea otters, blue whale. Many migrating and resident birds including shore birds, ducks, geese. Lesser goldfinch and golden-crowned sparrow are common.

Table A-1. Description of ecoregions that intersect with the 14 ESUs.

Ecoregion Province	Ecoregion Location/Size	Vegetation	Wildlife
California Dry Steppe	Central Valley of California, 19,200 mi ² (47,900 km ²)	Dominant native bunch grasses, primarily needlegrass, largely replaced by annual grasses (oat, brome, fescue, barley). Riparian vegetation on alkaline flats includes greasewood, picklewood, salt grass, and shadscale. Tule marshes along the lower reaches of the San Joaquin and Sacramento Rivers.	Habitat modifications have displaced some larger mammals, including California grizzly bear, wolf, and pronghorn antelope. Smaller common mammals include the Beechy ground squirrel, cottontail, blacktail jackrabbit, California mouse, and kangaroo rats. Mule deer are found in brushy areas; coyote and bobcat are found in adjacent woodlands. Common birds include the mourning dove, horned lark, western meadowlark, western kingbird, mockingbird, loggerhead shrike, house finch, lesser goldfinch, red-shafted flicker, and scrub jay, roadrunner, California quail, golden eagle, red-tailed hawk, and Cooper's hawk. Several species of snakes and lizards are present including rattlesnakes.
California Coastal Steppe, Mixed Forest, and Redwood Forest	Northern California coast, 4,600 mi ² (11,900 km ²)	Coastal forests are composed of redwood, Douglas-fir, hemlock, cedar, and various shrubs including Pacific rhododendrons, western azaleas, salal and California huckleberry. Understory herbaceous plants include western sword fern and redwood sorrel. The coastal forest also includes patchy communities on pine-cypress forest and oak woodlands. Southern exposed mountain slopes contain mixed forests of tanoak, coast live oak, madrone, and Douglas-fir. Fescue-oatland grasslands are found in dry headlands.	Mammals include mule deer, elk, Douglas and western gray squirrels, and chipmunks. Birds include Anna's hummingbird, Wilson's warbler, spotted owl, great horned owls, western screech-owls, northern pygmy-owls, various shore birds and waterfowl. Salamanders and slugs are numerous.
Sierran Steppe--Mixed Forest – Coniferous Forest – Alpine Meadow	California and southern Oregon, 68,300 mi ² (176,900 km ²)	Buckbrush, buckthorn, manzanita and oak chaparral is found on most low hills. Higher slopes are dominated by digger pine and blue oak. Sagebrush-pinyon forests occur at lower elevations on drier eastern slopes. Montane forests include ponderosa pine (western slopes), Jeffrey pine (eastern slopes), Douglas-fir, sugar pine, white fir, red fir, and incense cedar, and giant sequoia (western slopes). Mountain hemlock, California red fir, lodgepole pine, western white pine, and whitebark pine are found in the subalpine zone.	Large mammals include mule deer, mountain lion, coyote, and black bear. Small mammals include golden-mantled squirrel, bushytail wood rat, flying squirrel, red fox, fisher, yellow-haired porcupine, long-eared chipmunk, and Trowbridge's shrew. Common birds are mountain quail, Cassin's finch, Hammond's flycatcher, Lincoln's sparrow, Audubon's warbler, pine siskin, Oregon junco, blue goose, Williamson's sapsucker, and mountain chickadee. Birds of prey include the western screech-owl, Cooper's hawk, northern pygmy-owl, and great gray owl. Mountain kingsnake and bark beetles, which infest pine, also occur.

Table A-1. Description of ecoregions that intersect with the 14 ESUs.

Ecoregion Province	Ecoregion Location/Size	Vegetation	Wildlife
California Coastal Range Open Woodland – Shrub – Coniferous Forest – Meadow	Southern California, 24,900 mi ² (64,500 km ²)	Forests occur on northfacing slopes and on wetter sites and contain species including California live oak, canyon live oak, interior live oak, tanoak California laurel, Pacific madrone, golen chinkapin, and Pacific bayberry. Chaparral communities on southfacing slopes and drier sites consist of many evergreen species including chamise, manzanita, Christmasberry, California scrub oak, mountain mahogany, and various species of ceanothus. Patchy mixes of chaparral/coniferous forest communities occur in coastal areas and at higher elevations. Sagebrush/grassland occurs in interior valleys. Riparian forests are composed of numerous broadleaf species.	Large mammals include mule deer, coyote, mountain lion, California bobcat, gray fox, wood rat, and spotted and striped skunks. Small mammals found in chaparral communities include Merriam chipmunk, California mouse, and five-toed kangaroo rat. Birds include wrentit, common bushtit, rufous-sided towhee, white-and-golden-crowned sparrows, fox sparrows, hermit thrushes, ruby-crowned kinglets, and Audubon's warblers. Reptiles are numerous and widespred, including the coast horned lizard and gopher snake. With the exception of the Pacific treefrog, amphibians are rare.
Intermountain Semidesert	Columbia-Snake River Plateaus, Wyoming Basin, 159,100 mi ² (412,100 km ²)	Dominant vegetation is sagebrush, shadscale, and grasses. Riparian vegetation consist of willows and sedges in mountain areas and transitions to greasewood in alkali flats away from the mountains. Western juniper woodland occurs in arid parts of central Oregon. Bunchgrass occurs in more moist areas.	Large mammals include coyote, pronghorn antelope, mountain lion, bobcat, elk, mule deer, and moose in eastern riparian areas. Smaller species include Wyoming ground squirrel, whitetail prairie dog, deer mouse, whitetail jackrabbit, and porcupine. Common migrating and resident bird species include mallards, pintails, green-winged teal, gadwalls, Canada geese and sage grouse. Numerous raptors include Swainson's hawk, ferruginous hawk, rough-legged hawk, red-tailed hawk, marsh hawk, prairie falcon, great horned owl, and burrowing owl. Reptiles include sagebrush lizard, horned lizard, and prairie rattlesnake.
Great Plains – Palouse Dry Steppe	Rocky Mountain Piedmont, Upper Missouri Basin Broken Lands, Palouse grassland of Washington and Idaho, 290,700 mi ² (752,900 km ²)	Great Plains grasslands with scattered trees and shrubs (sagebrush, rabbitbrush) occur east of the Rockies. Common grass species include buffalo grass, grama, wheatgrass, and needlegrass. Other plants include sunflower, locoweed, blazingstar, white prickly poppy, and Russian-thistle (tumbleweed). Palouse grasslands are similar to Great Plains except that dominant species are replace by bluebunch wheatgrass, fescue, and bluegrass.	Buffalo occurred historically. Common large mammals are pronghorn antelope, mule deer, whitetail deer, and coyote. Smaller mammals include jackrabbits; desert cottontail; prairie dogs; thirteen-lined, Washington and Columbia ground squirrel; and badgers. Birds include sage grouse, greater prairie chickens, sharp-tailed grouse, horned lark, lark bunting, and western meadowlark.
Middle Rocky Mountain Steppe – Coniferous Forest – Alpine Meadow	Blue Mountains, Salmon River Mountains, basins and ranges of southwestern	Plant communities vary distinctly with altitude. Douglas-fir forests with grand fir occur below the subalpine zone on western slopes. Douglas-fir transitions to ponderosa pine at lower elevations. Lodgepole pines and grasses occur in the east and southeast. Shrubs (sagebrush) and grasses occur	Fauna in similar to that found in the Northern Rocky Mountain Forest Province (below). However, isolated arid mountain regions may contain unique assemblages of species.

Table A-1. Description of ecoregions that intersect with the 14 ESUs.

Ecoregion Province	Ecoregion Location/Size	Vegetation	Wildlife
	Montana, 81,800 mi ² (211,900 km ²)	on plains, lower mountain slopes, and dry south- and west-facing slopes east of the Bitterroot Mountains.	
Northern Rocky Mountain Forest-Steppe – Coniferous Forest – Alpine Meadow	Northern Idaho, western Montana, eastern Washington, 38,100 mi ² (98,700 km ²)	Engelmann spruce and subalpine fir occur in subalpine areas. These transition to forest of Western redcedar, western hemlock, Douglas-fir, western white pine, western larch, grand fir, and western ponderosa pine at lower elevations. Further south, these montane forests may be mixed with grass and sagebrush.	Large mammals in this province include black bear, deer, elk, mountain goat, mountain lion, and bobcat. Smaller Mammals include Columbia ground squirrel, flying squirrel, marten, redbellied chipmunk, and bushytail woodrat. Common birds are hawks, jays, chestnut-backed chickadees, red-breasted nuthatches, great gray owls, blue and ruffed grouse.

Source: Bailey 1995.